



State of Utah
DEPARTMENT OF NATURAL RESOURCES
DIVISION OF OIL, GAS AND MINING

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June 21, 1999

Scott Wilkinson
Gemstone Mining, Incorporated
599 North 800 West #1
P.O. Box 3413
Cedar City, Utah 84720

Re: Initial Review of Notice of Intention to Commence Large Mining Operations, Gemstone Mining Inc., Ruby Violet Mine, M/001/045, Beaver County, Utah

Dear Mr. Wilkinson:

The Division has completed a review of your draft Notice of Intention to Commence Large Mining Operations for the Ruby Violet Mine, located in Beaver County, Utah, which was received March 4, 1999. After reviewing the information, the Division has the following comments which will need to be addressed before tentative approval may be granted. The comments are listed below under the applicable Minerals Rule heading. Please format your response in a similar fashion.

The Division will suspend further review of the mine NOI until your response to this letter is received. If you have any questions in this regard please contact me, Tony Gallegos, Lynn Kunzler, Doug Jensen, or Tom Munson of the Minerals Staff. If you wish to arrange a meeting to sit down and discuss this review, please contact us at your earliest convenience. Thank you for your patience and cooperation in completing this permitting action.

Sincerely,

D. Wayne Hedberg
Permit Supervisor
Minerals Regulatory Program

jb

Attachment: Review

cc: Ed Ginouves, BLM-Cedar City Area Office

0002

REVIEW OF NOTICE OF INTENTION TO COMMENCE LARGE MINING OPERATIONS

**Gemstone Mining Inc.
Ruby Violet Mine**

**M/001/045
June 16, 1999**

R647-4-105 - Maps, Drawings & Photographs

105.2 Surface facilities map

The delineation of the areas to be disturbed should be in bold lines. (DJ)

Please show the location of the topsoil stock piles on the surface facilities map. (LK)

105.3 Drawings or Cross Sections (slopes, roads, pads, etc.)

Typical representative cross sections need to identify the final designed pit configurations. (DJ)

R647-4-106 - Operation Plan

106.3 Estimated acreages disturbed, reclaimed, annually.

The permit application indicates 51.5 acres will be disturbed during the mine life. The bonding calculations are for 35.59 acres. It was indicated in a phone call that the 35.59 acres of disturbance is a reflection of the first five years of mining. The plan needs to indicate this reduced figure and explain that it is only a five year projection of the disturbance. Also, the plan maps showing the total disturbed area, need to show where the first phase of mining will occur.

The diversion channels are located outside of the disturbed area for the proposed mine. Is the acreage to be disturbed in the construction of these channels included in the total acreage figure? (DJ)

106.5 Existing soil types, location, amount

Existing soils are classified as sandy loam and sandy clay loam soils. These soils are relatively shallow (2-3 inches). The operator has provided laboratory analysis of the soils which show that they would be suitable for reclamation and do not exhibit any special handling problems (i.e. toxicity, high salts, etc.). No additional soils information is required at this time. (LK)

106.6 Plan for protecting & redepositing soils

Available topsoil will be salvaged and stockpiled for reclamation. Topsoil stockpiles will be stabilized by seeding with 5 pounds/acre of grass seed. No specific grass species were identified. Also, it is recommended that legume species be added to the topsoil stabilization mix as well. Please refer to the attached seed mix for a recommended species and rates. If acceptable, please confirm that it will be used. Also, it is recommended that topsoil stockpiles be signed, indicating that it is topsoil and is not to be disturbed. (LK)

106.7 Existing vegetation - species and amount

Please provide the results of a vegetation survey which shows the percent vegetation cover for the mine site. (LK)

R647-4-107 - Operation Practices

107.2 Drainages to minimize damage

Please provide a description of how these diversion drainages will be built, showing the approximate size and configuration, and any proposed erosion protection measures (i.e., riprap) if necessary. The general locations are shown on Figure 13. (TM)

107.5 Suitable soils removed & stored

See comments under R647-4-106.6. (LK)

107.6 Concurrent reclamation

The plan does not discuss contemporaneous reclamation. Will there be any areas that can be reclaimed contemporaneously, or must all reclamation be delayed until final closure? Please clarify. (LK)

R647-4-110 - Reclamation Plan

110.2 Roads, highwalls, slopes, drainages, pits, etc., reclaimed

Please describe what permanent alterations to the existing drainages will remain and how these permanent drainage diversions will be built, the approximate size and configuration, any protection measures (i.e., riprap) that will be taken, if necessary. Are the permanent locations the same as shown on figure 13? How will these drainages be sized to handle the expected storm runoff volumes? (TM)

110.5 Revegetation planting program

Please refer to the attached seed mix for final reclamation for recommended changes to the species and rates. The attached seed mix is more likely to provide long term stability of the site, given the post mining land use of grazing and wildlife habitat and recreation. (LK)

R647-4-111 - Reclamation Practices

111.2 Reclamation of natural channels

See comments under 110.2

111.12 Topsoil redistribution

The reclamation plan noted soil or organic material being placed in the reclaimed areas at a rate of 20 tons per acre. This rate is acceptable for organic amendment such as composted manure, but is not adequate for topsoil. Topsoil should be applied at a minimum 6-inch depth. (LK)

R647-4-112 - Variance

Highwalls of the mine that will remain after mining are projected to be at a 51 degree overall slope. The rules require a minimum 45 degree angle. GMI will need to apply for a variance for these areas that will exceed the 45 degree requirement. A statement is made on page 4 of the plan of operation that all slopes of the mine and barren rock facility will be reduced to 21 degrees. If this is the case, no variance will be required; however, a plan for reducing the pit slopes to 21 degrees needs to be included. (DJ)

R647-4-113 - Surety

Existing Plant

We are unable to verify bonding figures for the existing plant area. There was no scaled plan map provided of that area to check the calculations. Please provide a scaled plan map of the existing plant area. (DJ)

Bonding calculations for the existing processing plant notes a total acreage to be reclaimed as 11,035 acres. Please review and clarify this figure. (DJ)

The 5-year escalation figure is now 3.27%/year. Please revise and recalculate the bond estimate accordingly. (DJ)

Mine Site

The 5-year escalation figure is now 3.27%/year. Please revise and recalculate the bond estimate accordingly. (DJ)

We are unable to confirm bonding acreages. Please provide scaled site maps or cross-sections in the plan that will enable us to do so. (DJ)

The BLM Environmental Assessment notes a water line right-of-way disturbance to supply water to the mine. While the BLM is considering this as a separate matter, the Division considers this as part of the mine related disturbance. A reclamation plan and a cost estimate for these features needs to be included in the bond calculations. (DJ)

Topsoil stockpiles need to be designated on the mine plan map. We are unable to estimate topsoil replacement costs without some knowledge of the handling costs. (DJ)

A cost for surface drainage construction and reclamation should be included in the cost estimate. (DJ)

R647-4-115 - Confidential Information

No information in the Notice has been identified as confidential.

Recommended Topsoil Stabilization
Species List
for

GMI
Ruby Violet Mine
M/001/045

<u>Common Name</u>	<u>Species Name</u>	<u>*Rate lbs/ac (PLS)</u>
Thickspike wheatgrass	<u>Agropyron dasystachum</u>	2.0
Western Wheatgrass	<u>Agropyron smithii</u>	2.0
'Piute' orchard grass	<u>Dactylis glomerata</u>	0.5
Ladac Alfalfa	<u>Medicago sativa</u>	1.5
Yellow sweetclover	<u>Melilotus officinalis</u>	1.0
Small burnet	<u>Sanguisorba minor</u>	1.5
Total		8.5 lbs/ac

*This the recommended broadcast seeding rate.

Recommended Revegetation Species List
for

GMI
Ruby Violet Mine
M/001/045

<u>Common Name</u>	<u>Species Name</u>	<u>*Rate lbs/ac (PLS)</u>
Crested wheatgrass	<u>Agropyron cristatum</u>	0.5
Bluebunch wheatgrass	<u>Agropyron spicatum</u>	2.0
Western wheatgrass	<u>Agropyron smithii</u>	2.0
Basin wildrye	<u>Elymus cinereus</u>	2.0
Indian ricegrass	<u>Oryzopsis hymenoides</u>	3.0
'Ladak' alfalfa	<u>Medicago sativa</u>	1.0
Yellow sweetclover	<u>Melilotus officinalis</u>	0.5
Palmer penstemon	<u>Penstemon palmerii</u>	0.5
Small burnet	<u>Sanguisorba minor</u>	1.0
Black sagebrush	<u>Artemisia nova</u>	0.1
Forage kochia	<u>Kochia prostrata</u>	0.5
Bitterbrush	<u>Purshia tridentata</u>	1.0**
		Total 14.1 lbs/ac

* Recommended Broadcast (hyrdroseeding) rate. If drill seeding, cut rate by 1/4.

** Bitterbrush seed should be hand planted on firm seedbed - it does not establish well from broadcast seeding methods.

This seed mix is acceptable to the BLM (as per phone call to Ed Ginouves on June 14, 1999)

Note: If reclamation does not occur for several years, it is suggested that the seed mix be reviewed and modified as necessary to reflect current revegetation technology and species availability.

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